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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/003,389	10/30/2001	Scott C. Clouthier	10007418-1	5349

7590 06/16/2005

HEWLETT-PACKARD COMPANY
Intellectual Property Administration
P.O. Box 272400
Fort Collins, CO 80527-2400

EXAMINER	
DIVINE, LUCAS	
ART UNIT	**PAPER NUMBER**
2624	

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	10/003,389	CLOUTHIER ET AL.
	Examiner	**Art Unit**
	Lucas Divine	2624

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 30 October 2001.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-27 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-27 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 30 October 2001 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 10/30/01.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because Figs. 2 and 3 use the term '**K data**' as the output from the buffer to the K-merge unit. The specification and claims refer to this as '**K plane**'. Examiner requests that terminology be kept consistent. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 14 – 17, 25, and 27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The term 'FX' algorithm discussed in paragraph [0029] is not enabling. Applicant states that such FX decompression is completed according to an unknown '**FX algorithm**' and is lossless and pixel by pixel. Many decompression algorithms are lossless and pixel by pixel, but applicant *specifically claims FX decompression according to an unknown FX algorithm*.

Examiner has performed patent searches, consulted with Primary Examiners, an Internet search, an INSPEC search, an ASM Digital Library search, and an IEEE search to attempt to determine what an FX algorithm for decompression entails or how one would implement it. No other patent or published application, single IEEE, ASM, or INSPEC document, or webpage has been found that discusses or implements such an algorithm. Primary Examiners suggest lack of enablement.

It has therefore been determined information regarding such an FX algorithm for decompression was <u>not readily available or well-known in the art</u>. Therefore, one reasonably skilled in the art could not make or use the invention without knowing such a key feature to the claimed invention and thus the claims are not enabled by the disclosure.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1, 7, 8, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino et al. (US 6204933) in view of Hane et al. (US 6903830) hereafter as Yoshino and Hane.

Regarding claim 1, Yoshino teaches **an apparatus** (21A, Figs. 1 and 2)**, comprising:**

a memory to store compressed color data and decompressed color data (memory holds all printer image data; 7A in Figs. 1 and 2);

a decompressor arranged to receive the compressed color data from the memory and configured to generate the decompressed color data (921A, Fig. 1);

a color space converter arranged to receive the decompressed color data from the memory and configured to perform a color space conversion on the decompressed color data to form converted color space data (923A, Fig. 1)**; and**

a halftoning device arranged to receive the converted color space data and configured to perform a halftoning operation to generate halftone data (925A, Fig 1).

While Yoshino teaches a system with a single memory to hold all printer data, Yoshino does not specifically teach that the processes in the data control unit save data to the memory between operations.

Hane teaches a printer that has memory, performs decompression, performs color conversion, and halftoning including temporarily storing data in the memory between operations (col. 3 line 58 – col. 4 line 5, specifically line 66).

It would have been obvious to one of ordinary skill in the art that in order to process large amounts of data, storing data in memory as a buffer or cache would be beneficial. The motivation for doing so would have been to have a location to store data while it was not being processed. Image processing units such as those in Yoshino typically perform operations byte by byte, block by block, band by band or some other group by group, and all the data isn't processed at once. Therefore the data not being currently processed would be needed to be temporarily saved in a memory. Another reason to temporarily stored data between image processing blocks would have been to control timing between units. Some units are faster or slower than others, so storing data in a memory cache or buffer would allow the smooth transfer of data and prevention of errors.

Regarding claims 7 and 8, which depend from claim 1, Yoshino further teaches **the compressed color data includes compressed RGB color data and the converted color space data includes a C plane ,a M plane, a Y plane, and a K plane** (col. 5 lines 5-16).

Regarding claim 18, the structural elements of apparatus claim 1 perform all of the method steps of method claim 18. Therefore method claim 18 is rejected for the same reasons as stated in the rejection of apparatus claim 1.

4. Claims 2 – 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino and Hane as applied to claims 1, 7, and 8 above, and further in view of Tateyama (US 2002/0054344).

Regarding claims 2, which depends from claim 1, Yoshino and Hane do not specifically teach the **decompressor to be a lossy decompressor**.

Tateyama teaches a printer that has a memory, performs decompression, performs coloring conversion, and halftoning including **decompressor to be a lossy decompressor** (Fig. 29, wherein JPEG decompression is lossy).

It would have been obvious to one of ordinary skill in the art that the decompression standard of Yoshino could have been JPEG. The motivation for doing so would have been to use an industry decompression standard that is fast (lossy) and has well known implementation methods in printers, as shown in Tateyama. Tateyama also teaches that it is beneficial to decompression with JPEG because many pictures from cameras are compressed in JPEG format (paragraph 0005).

Regarding claims 3 and 4, which depend from claim 2, Yoshino further teaches **the compressed color data includes compressed RGB color data and the converted color space data includes a C plane ,a M plane, a Y plane, and a K plane** (col. 5 lines 5-16).

Regarding claim 5, which depends from claim 4, Tatayama further teaches **a JPEG decompressor** (Fig. 29, step S281).

Regarding claim 9, which depends from claim 8, arguments analogous to apparatus claim 2 are applicable to apparatus claim 9.

5. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino, Hane, and Tateyama as applied to claims 1 – 5 above, and further in view of Lupien, J. et al. (US 6401143) hereafter as Lupien.

Regarding claim 6, which depends from claim 5, the combination does not specifically teach using DMAs to transfer data in a printer from functional units to memory.

Lupien teaches transferring data in a printer from function units to memory via a DMA (Fig. 2, dma controller 90 – Fig. 3 teaches controlling dma to direct data from the compressor/decompressors to the memory as well as from the image processing unit 70 to memory, which can include the color space converter of the other references, see also Fig. 5, cols. 6, 7 and throughout).

It would have been obvious to one of ordinary skill in the art to include direct memory access controllers in a printing system as shown in Lupien. The motivations for doing so would have been to have faster memory accesses and easier memory controlling as well as reducing processor operations by having the memory controlling be provided in a separate circuit.

6. Claims 10 – 13 and 19 – 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino and Hane as applied to claims 1 and 18 above, and further in view of Lapstun et al. (US 2004/0042046) hereafter as Lapstun.

Regarding claim 10, which depends from claim 1, while the combination of Yoshino and Hane teaches expanding the inputted data and storing all printer data in the memory, the combination does not specifically teach **a second decompressor arranged to receive compressed K plane data from the memory to generate decompressed K plane data.**

Lapstun teaches a printer with memory, decompression, and halftoning including a **second decompressor arranged to receive compressed K plane data from the memory to generate decompressed K plane data** (Fig. 18 step 16 decompresses K plane data).

It would have been obvious to one of ordinary skill in the art to have a separate black decompressor in a printer. The motivation for doing so would have been to have high quality

black text and line reproduction (paragraph 0055, 0057, 0065, 0110, wherein the black text and images are at a much higher resolution than the color data, which is needed because the human eye has a higher sensitivity to grayscale data [paragraph 0064]).

Regarding claim 11, which depends from claim 10, Lapstun further teaches **the first decompressor includes a lossy decompressor** (JPEG, paragraph 0160); **the second decompressor includes a lossless decompressor** (Group 4 facsimile, paragraph 0135).

And Yoshino teaches **the color data includes RGB color data; the converted color space data includes a C plane, a M plane, a Y plane, and a K plane** (col. 5 lines 5-16).

Regarding claims 12 and 13, which depends from claim 11, Lapstun teaches **a merging device arranged to receive the decompressed K plane data and the K plane and configured to combine the K plane and the decompressed K plane data** (composite bi-level data is combined data from the CMYK planes [thus including the K plane] from 14 and the K plane data from 16) and **the decompressed K plane data includes a first plurality of data elements; and the K plane includes a second plurality of data elements** (both the plane [contone data] and plane data [bi-level data] are listed as 'data' thus implying plural datum).

Regarding claim 19, which depends from claim 18, the structural elements of apparatus claim 10 perform all of the method steps of method claim 19. Therefore method claim 19 is rejected for the same reasons as stated in the rejection of apparatus claim 10.

Regarding claim 20, which depends from claim 19, the structural elements of apparatus claims 7 and 8 perform all of the method steps of method claim 20. Therefore method claim 20 is rejected for the same reasons as stated in the rejection of apparatus claims 7 and 8.4

Regarding claim 21, which depends from claim 20, the structural elements of apparatus claim 12 perform all of the method steps of method claim 21. Therefore method claim 21 is rejected for the same reasons as stated in the rejection of apparatus claim 12.

7. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino, Hane, and Shibuya et al. (US 6870638) hereafter as Shibuya.

Regarding claim 22, Yoshino teaches **an apparatus** (21A, Figs. 1 and 2), **comprising:**

a transition placement device coupled to the photoconductor exposure system and configured to provide the drive signal responsive to pulse codes (col. 12 lines 5-12 and Fig. 16, where pulse width values are output to the printer engine 10A for printing);

a memory to store compressed color data and decompressed color data (memory holds all printer image data; 7A in Figs. 1 and 2);

a decompressor arranged to receive the compressed color data from the memory and configured to generate the decompressed color data (921A, Fig. 1);

a color space converter arranged to receive the decompressed color data from the memory and configured to perform a color space conversion on the decompressed color data to form converted color space data (923A, Fig. 1); **and**

a halftoning device arranged to receive the converted color space data and configured to perform a halftoning operation to generate the pulse codes (925A, Fig 1; col. 5 lines 25-30).

While Yoshino teaches a system with a single memory to hold all printer data, Yoshino does not specifically teach that the processes in the data control unit save data to the memory between operations.

Hane teaches a printer that has memory, performs decompression, performs color conversion, and halftoning including temporarily storing data in the memory between operations (col. 3 line 58 – col. 4 line 5, specifically line 66).

It would have been obvious to one of ordinary skill in the art that in order to process large amounts of data, storing data in memory as a buffer or cache would be beneficial. The motivation for doing so would have been to have a location to store data while it was not being processed. Image processing units such as those in Yoshino typically perform operations byte by byte, block by block, band by band or some other group by group, and all the data isn't processed at once. Therefore the data not being currently processed would be needed to be temporarily saved in a memory. Another reason to temporarily stored data between image processing blocks would have been to control timing between units. Some units are faster or slower than others, so storing data in a memory cache or buffer would allow the smooth transfer of data and prevention of errors.

While Yoshino teaches a printer engine driven by pulse width modulation in a laser printer, the combination of Yoshino and Hane does not specifically teach **a photoconductor and a photoconductor exposure system configured to form a latent electrostatic image on the photoconductor according to a drive signal.**

Shibuya teaches a printing system by the same assignee as Yoshino that has the same type of halftone processing producing and pulse width modulation to a printer engine (Fig. 1)

including a **photoconductor and a photoconductor exposure system configured to form a latent electrostatic image on the photoconductor according to a drive signal** (Fig. 12).

It would have been obvious to one of ordinary skill in the art that the printer engine of a laser printer such as that of Yoshino would have had an exposure system like that of Shibuya. The motivation for having such a printer engine would have been to have a faster printer engine than that of ink jet or dot matrix printers.

8. Claims 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino, Hane, and Shibuya as applied to claim 22 above, and further in view of Tateyama.

Regarding claims 23, which depends from claim 22, while Yoshino teaches the **compressed color data includes compressed RGB color data and the converted color space data includes a C plane ,a M plane, a Y plane, and a K plane** (col. 5 lines 5-16), the combination does not specifically teach the **decompressor to be a lossy decompressor**.

Tateyama teaches a printer that has a memory, performs decompression, performs coloring conversion, and halftoning including **decompressor to be a lossy decompressor** (Fig. 29, wherein JPEG decompression is lossy).

It would have been obvious to one of ordinary skill in the art that the decompression standard of Yoshino could have been JPEG. The motivation for doing so would have been to use an industry decompression standard that is fast (lossy) and has well known implementation methods in printers, as shown in Tateyama. Tateyama also teaches that it is beneficial to decompression with JPEG because many pictures from cameras are compressed in JPEG format (paragraph 0005).

9. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino, Hane, Shibuya and Tateyama as applied to claim 23 above, and further in view of Lapstun.

Regarding claim 24 , which depends from claim 23, while the combination of Yoshino, Hane, Tateyama, and Shibuya teaches expanding the inputted data and storing all printer data in the memory, the combination does not specifically teach **a second decompressor arranged to receive compressed K plane data from the memory to generate decompressed K plane data or a merging device arranged to receive the decompressed K plane data and the K plane and configured to combine the K plane and the decompressed K plane data.**

Lapstun teaches a printer with memory, decompression, and halftoning including **a second decompressor arranged to receive compressed K plane data from the memory to generate decompressed K plane data** (Fig. 18 step 16 decompresses K plane data) and **a merging device arranged to receive the decompressed K plane data and the K plane and configured to combine the K plane and the decompressed K plane data** (composite bi-level data is combined data from the CMYK planes [thus including the K plane] from 14 and the K plane data from 16).

It would have been obvious to one of ordinary skill in the art to have a separate black decompressor in a printer and perform merging of text and color data. The motivation for doing so would have been to have high quality black text and line reproduction (paragraph 0055, 0057, 0065, 0110, wherein the black text and images are at a much higher resolution than the color data, which is needed because the human eye has a higher sensitivity to grayscale data [paragraph 0064]).

10. Claim 26 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshino, Shibuya, Hane, Lapstun, and Lupien.

Regarding claim 26, Yoshino teaches **an apparatus** (21A, Figs. 1 and 2), **comprising:**

a pulse width modulator coupled to the photoconductor exposure system and configured to provide the drive signal responsive to pulse codes (col. 12 lines 5-12 and Fig. 16, where pulse width values are output to the printer engine 10A for printing);

a memory to store compressed RGB data, decompressed RGB data, compressed K plane data, and decompressed plane data (memory holds all printer image data; 7A in Figs. 1 and 2 including RGB and CMYK data [col. 5 lines 5-16]);

a decompressor arranged to receive the compressed RGB data from the memory and configured to generate the decompressed RGB data (921A, Fig. 1, col. 5 lines 5-10);

a color space converter arranged to receive the decompressed RGB data from the memory and configured to perform a color space conversion on the decompressed color data to form a C plane, a M plane, a Y plane, and K plane (923A, Fig. 1, col. 5 lines 5-16); **and**

a halftoning device arranged to receive the C plane, M plane, Y plane and K plane and configured to perform a halftoning operation to generate the pulse codes (925A, Fig 1; col. 5 lines 25-30).

While Yoshino teaches a system with a single memory to hold all printer data, Yoshino does not specifically teach that the processes in the data control unit save data to the memory between operations.

Hane teaches a printer that has memory, performs decompression, performs color conversion, and halftoning including temporarily storing data in the memory between operations (col. 3 line 58 – col. 4 line 5, specifically line 66).

It would have been obvious to one of ordinary skill in the art that in order to process large amounts of data, storing data in memory as a buffer or cache would be beneficial. The motivation for doing so would have been to have a location to store data while it was not being processed. Image processing units such as those in Yoshino typically perform operations byte by byte, block by block, band by band or some other group by group, and all the data isn't processed at once. Therefore the data not being currently processed would be needed to be temporarily saved in a memory. Another reason to temporarily stored data between image processing blocks would have been to control timing between units. Some units are faster or slower than others, so storing data in a memory cache or buffer would allow the smooth transfer of data and prevention of errors.

While Yoshino teaches a printer engine driven by pulse width modulation in a laser printer, the combination of Yoshino and Hane does not specifically teach **a photoconductor and a photoconductor exposure system configured to form a latent electrostatic image on the photoconductor according to a drive signal.**

Shibuya teaches a printing system by the same assignee as Yoshino that has the same type of halftone processing producing and pulse width modulation to a printer engine (Fig. 1) including **a photoconductor and a photoconductor exposure system configured to form a latent electrostatic image on the photoconductor according to a drive signal** (Fig. 12).

It would have been obvious to one of ordinary skill in the art that the printer engine of a laser printer such as that of Yoshino would have had an exposure system like that of Shibuya. The motivation for having such a printer engine would have been to have a faster printer engine than that of ink jet or dot matrix printers.

While the combination of Yoshino, Hane, and Shibuya teaches expanding the inputted data and storing all printer data in the memory, the combination does not specifically teach a **second decompressor arranged to receive compressed K plane data from the memory to generate decompressed K plane data or a merging device arranged to receive the decompressed K plane data and the K plane and configured to combine the K plane and the decompressed K plane data.**

Lapstun teaches a printer with memory, decompression, and halftoning including a **second decompressor arranged to receive compressed K plane data from the memory to generate decompressed K plane data** (Fig. 18 step 16 decompresses K plane data) and a **merging device arranged to receive the decompressed K plane data and the K plane and configured to combine the K plane and the decompressed K plane data** (composite bi-level data is combined data from the CMYK planes [thus including the K plane] from 14 and the K plane data from 16).

It would have been obvious to one of ordinary skill in the art to have a separate black decompressor in a printer and perform merging of text and color data. The motivation for doing so would have been to have high quality black text and line reproduction (paragraph 0055, 0057, 0065, 0110, wherein the black text and images are at a much higher resolution than the color

data, which is needed because the human eye has a higher sensitivity to grayscale data [paragraph 0064]).

The combination does not specifically teach using DMAs to transfer data in a printer from functional units to memory.

Lupien teaches transferring data in a printer from function units to memory via a DMA (Fig. 2, dma controller 90 – Fig. 3 teaches controlling dma to direct data from the compressor/decompressors to the memory as well as from the image processing unit 70 to memory, which can include the color space converter of the other references, see also Fig. 5, cols. 6, 7 and throughout).

It would have been obvious to one of ordinary skill in the art to include direct memory access controllers in a printing system as shown in Lupien. The motivations for doing so would have been to have faster memory accesses and easier memory controlling as well as reducing processor operations by having the memory controlling be provided in a separate circuit.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US-6259536, Coleman, 7-10-2001: teaches color printing yielding a background dependent black image.

US-2002/0171854, Yamamoto et al., 1-21-2002: teaches an image processing apparatus, see specifically Figs. 3 and 5.

US-6433889, Tanabe, 8-13-2002: teaches an image processing apparatus and method that selects different versions of black for image output.

US-20020054346, Fredlund et al., 12-9-2002: teaches a system and method for selecting photographic images using index prints, see specifically Fig. 6 and its description.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucas Divine whose telephone number is 571-272-7432. The examiner can normally be reached on Monday - Friday, 7:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Moore can be reached on 571-272-7437. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KING Y. POON
PRIMARY EXAMINER

Lucas Divine
Examiner
Art Unit 2624

ljd